## Claims

1. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising the steps of

   i) contacting a test compound with a PDE11A polypeptide,

   ii) detect binding of said test compound to said PDE11A polypeptide.

2. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising the steps of

   i) determining the activity of a PDE11A polypeptide at a certain concentration of a test compound or in the absence of said test compound,

   ii) determining the activity of said polypeptide at a different concentration of said test compound.

3. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising the steps of

   i) determining the activity of a PDE11A polypeptide at a certain concentration of a test compound,

ii) determining the activity of a PDE11A polypeptide at the presence of a compound known to be a regulator of a PDE11A polypeptide.

4. The method of any of claims 1 to 3, wherein the step of contacting is in or at the surface of a cell.

5. The method of any of claims 1 to 3, wherein the cell is in vitro.

6. The method of any of claims 1 to 3, wherein the step of contacting is in a cell-free system.

7. The method of any of claims 1 to 3, wherein the polypeptide is coupled to a detectable label.

8. The method of any of claims 1 to 3, wherein the compound is coupled to a detectable label.

9. The method of any of claims 1 to 3, wherein the test compound displaces a ligand which is first bound to the polypeptide.

10. The method of any of claims 1 to 3, wherein the polypeptide is attached to a solid support.

11. The method of any of claims 1 to 3, wherein the compound is attached to a solid support.

12. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising the steps of

i) contacting a test compound with a PDE11A polynucleotide,

ii) detect binding of said test compound to said PDE11A polynucleotide.

13. The method of claim 12 wherein the nucleic acid molecule is RNA.

14. The method of claim 12 wherein the contacting step is in or at the surface of a cell.

15. The method of claim 12 wherein the contacting step is in a cell-free system.

16. The method of claim 12 wherein polynucleotide is coupled to a detectable label.

17. The method of claim 12 wherein the test compound is coupled to a detectable label.

18. A method of diagnosing a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising the steps of

i) determining the amount of a PDE11A polynucleotide in a sample taken from said mammal,

ii) determining the amount of PDE11A polynucleotide in healthy and/or diseased mammals.

19. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary

diseases in a mammal comprising a therapeutic agent which binds to a PDE11A polypeptide.

20. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising a therapeutic agent which regulates the activity of a PDE11A polypeptide.

21. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising a therapeutic agent which regulates the activity of a PDE11A polypeptide, wherein said therapeutic agent is

i) a small molecule,
ii) an RNA molecule,
iii) an antisense oligonucleotide,
iv) a polypeptide,
v) an antibody, or
vi) a ribozyme.

22. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising a PDE11A polynucleotide.

23. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising a PDE11A polypeptide.

24. Use of regulators of a PDE11A for the preparation of a pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal.

25. Method for the preparation of a pharmaceutical composition useful for the treatment of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal comprising the steps of

i) identifying a regulator of PDE11A,

ii) determining whether said regulator ameliorates the symptoms of a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases in a mammal; and

iii) combining of said regulator with an acceptable pharmaceutical carrier.

26. Use of a regulator of PDE11A for the regulation of PDE11A activity in a mammal having a disease comprised in a group of diseases consisting of disorders of the peripheral and central nervous system, cardiovascular diseases, cancer, liver disease and genito-urinary diseases.